



3S4

POWER PENTODE

MINIATURE TYPE

3S4

GENERAL DATA

Electrical:

Filament, Coated:

| Filament arrangement | Series* | Parallel** | |
|----------------------|---------|------------|-------|
| Voltage | 2.8 | 1.4 | volts |
| Current | 0.05 | 0.1 | amp |

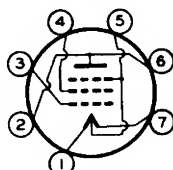
Direct Interelectrode Capacitances:^o

| | | |
|--|-----|---------|
| Grid No.1 to plate | 0.3 | μ f |
| Grid No.1 to filament (mid-tap) & grid No.3, and grid No.2. | 4.8 | μ f |
| Plate to filament (mid-tap) & grid No.3, and grid No.2. | 4 | μ f |

Mechanical:

| | |
|---|--|
| Mounting Position | Any |
| Maximum Overall Length | 2-1/8" |
| Maximum Seated Length | 1-7/8" |
| Length, Base Seat to Bulb Top (Excluding tip) | 1-1/2" \pm 3/32" |
| Maximum Diameter | 3/4" |
| Bulb | T-5-1/2 |
| Base | Small-Button Miniature 7-Pin (JETEC No.E7-1) |
| Basing Designation for BOTTOM VIEW | 7BA |

Pin 1 - Filament
(-series)
Pin 2 - Plate
Pin 3 - Grid No.1
Pin 4 - Grid No.2



Pin 5 - Filament
Mid-Tap
(-parallel),
Grid No.3
Pin 6 - Plate
Pin 7 - Filament (+)

AMPLIFIER - Class A₁

Maximum Ratings, Design-Center Values:

| | Series* | Parallel** | |
|---|-----------------------|------------|-------|
| PLATE VOLTAGE | 90 max. | 90 max. | volts |
| GRID-No.2 (SCREEN) VOLTAGE | 67.5 max. | 67.5 max. | volts |
| TOTAL MAXIMUM-SIGNAL CATHODE CURRENT | 6 [#] max. | 12 max. | ma |
| TOTAL ZERO-SIGNAL CATHODE CURRENT | 4.5 [#] max. | 9 max. | ma |

Typical Operation and Characteristics:

| | Series* | Parallel** | |
|-----------------------------|---------|------------|-------|
| Plate Voltage | 67.5 | 90 | volts |
| Grid-No.2 Voltage | 67.5 | 67.5 | volts |

^o without external shield.

[#] For each 1.4-volt filament section. For series operation of the sections, a shunting resistor must be connected across the section between pins No.1 and No.5 to bypass any cathode current in excess of the rated maximum per section. When other tubes in series filament arrangement contribute to the filament current of the 3S4, an additional shunting resistor may be required between pins No.1 and No.7.

*, **: See next page.

← indicates a change.

JAN. 3, 1955

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

DATA

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POWER PENTODE

| | Series* | | Parallel** | | |
|--|---------|------|------------|------|---------|
| → Grid-No.1 (Control-Grid) | | | | | |
| Voltage | -7 | -7 | -7 | -7 | volts |
| Peak AF Grid-No.1 | | | | | |
| Voltage | 7 | 7 | 7 | 7 | volts |
| Zero-Sig. Plate Current . . | 6 | 6.1 | 7.2 | 7.4 | ma |
| Zero-Sig. Grid-No.2 Current . | 1.2 | 1.1 | 1.5 | 1.4 | ma |
| Plate Resistance (Approx.) . | 0.1 | 0.1 | 0.1 | 0.1 | megohm |
| Transconductance | 1400 | 1425 | 1550 | 1575 | μmhos |
| Load Resistance | 5000 | 8000 | 5000 | 8000 | ohms |
| Total Harmonic Distortion . | 12 | 13 | 10 | 12 | % |
| Max.-Sig. Power Output . . . | 160 | 235 | 180 | 270 | mw |
| → Maximum Circuit Values (For maximum rated conditions): | | | | | |
| Grid-No.1-Circuit Resistance: | | | | | |
| For fixed-bias operation | | | 2.2 max. | | megohms |
| For cathode-bias operation | | | 2.2 max. | | megohms |
| → Typical Operation with Single Filament Section:* | | | | | |
| Filament Voltage | | | 1.4 | | volts |
| Filament Current | | | 0.05 | | amp |
| Plate Voltage | | | 90 | | volts |
| Grid-No.2 Voltage | | | 67.5 | | volts |
| Grid-No.1 Voltage | | | -7 | | volts |
| Peak AF Grid-No.1 Voltage | | | 7 | | volts |
| Zero-Signal Plate Current | | | 3.7 | | ma |
| Zero-Signal Grid-No.2 Current | | | 0.7 | | ma |
| Plate Resistance (Approx.) | | | 0.2 | | megohm |
| Transconductance | | | 800 | | μmhos |
| Load Resistance | | | 16000 | | ohms |
| Total Harmonic Distortion | | | 12 | | % |
| Maximum-Signal Power Output | | | 145 | | mw |
| → Maximum Circuit Values (For maximum rated conditions): | | | | | |
| Grid-No.1-Circuit Resistance: | | | | | |
| For fixed-bias operation | | | 2.2 max. | | megohms |
| For cathode-bias operation | | | 2.2 max. | | megohms |
| * Filament voltage applied across the two sections in series between pins No.1 and No.7. Grid-No.1 voltage is referred to pin No.1. | | | | | |
| ** Filament voltage applied across the two sections in parallel between pin No.5 and pins No.1 and No.7 connected together. Grid-No.1 voltage is referred to pin No.5. | | | | | |
| • Either filament section may be operated singly with the other section floating. It is to be noted, however, that such operation may impair the emission capabilities of the unused section. Although in subsequent operation the unused section may be operated in series with the used section, it should not be operated singly. | | | | | |
| Curves shown under Type 1S4 also apply to the 3S4 with the filaments connected in parallel | | | | | |
| → Indicates a change. | | | | | |

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